

## WHAT IS CLAIMED IS:

1. A method for improving the effectiveness of a disinfection agent added to an aqueous medium used in the processing of foodstuffs comprising the steps of:

5 controlling the pH level of the aqueous medium to a desired level prior to or concurrent with the addition of the disinfection agent to the aqueous medium.

2. The method for improving the effectiveness of a disinfection agent added to an aqueous medium according to claim 1, wherein said step of controlling further comprises pH  
10 levels of the aqueous medium in the range of 6 to 8.

3. The method for improving the effectiveness of a disinfection agent added to an aqueous medium according to claim 1, wherein said step of controlling further comprises acidification until the pH level of the aqueous medium is in the range of 6.5 to 7.

15 4. The method for improving the effectiveness of a disinfection agent added to an aqueous medium according to claim 1, wherein said foodstuffs is poultry and said disinfection agent is chlorine.

20 5. In a method for processing poultry comprising the steps of scalding, picking, eviscerating, washing, rinsing and chilling said poultry using an aqueous medium, the improvement comprising the steps of:

controlling the pH level of the aqueous medium;

recovering at least a portion of the aqueous medium from the chilling step;

25 filtering said recovered aqueous medium to remove particulate matter; and

reusing said filtered recovered aqueous medium in the chilling step.

6. A method for reducing the level of poultry contamination resulting from the processing of poultry, wherein the processing includes the steps of scalding, picking,

eviscerating, washing and rinsing said poultry, the method for reducing the level of poultry contamination comprising the steps of:

adding a disinfectant to process water used in said processing steps;

controlling the pH level of said disinfected process water; and

5 using said disinfected process water at each of said processing steps, thereby reducing the level of contamination of the poultry at each of said processing steps.

7. The method for reducing the level of poultry contamination resulting from the processing of poultry according to claim 6, wherein said step of adding a disinfectant to process  
10 water is performed during said eviscerating step.

8. The method for reducing the level of poultry contamination resulting from the processing of poultry according to claim 6, wherein said step of adding a disinfectant to process water is performed prior to any of said processing steps.  
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9. The method for reducing the level of poultry contamination resulting from the processing of poultry according to claim 6, wherein said disinfectant is selected from the group of chlorine, chloramine, chlorite, chlorine dioxide and ozone.

20 10. The method for reducing the level of poultry contamination resulting from the processing of poultry according to claim 6, further comprising a step of monitoring and regulating said steps of adding a disinfectant to process water and said step of controlling the pH level of said disinfected process water.

25 11. The method for reducing the level of poultry contamination resulting from the processing of poultry according to claim 6, wherein the pH level of said disinfected process water is in the range of between 6 and 8.

12. A method for reducing the level of poultry contamination resulting from the processing of poultry during the poultry chilling process, the method comprising the steps of:  
recovering a portion of chiller water used in said chilling process;  
filtering organic solids from said recovered water; and  
5 returning said filtered water to said chilling process, whereby reduction of the organic solids from the chiller water reduces the level of poultry contamination.

13. The method for reducing the level of poultry contamination according to claim 12, wherein said step of filtering further comprises the steps of:  
10 screening said recovered water through a screening device;  
floating said recovered water in a floatation unit, wherein a portion of the organic solids is floated to the top of the floatation unit; and  
fine filtering said recovered water through a filter.

14. The method for reducing the level of poultry contamination according to claim 12, further comprising the steps of:  
15 adding a disinfectant to the chiller water used in the chilling process;  
controlling the pH level of the chiller water; and  
monitoring and regulating said steps of adding a disinfectant and controlling the pH level  
20 of the chiller water.

15. The method for reducing the level of poultry contamination according to claim 12, wherein the pH level of the chiller water is in the range of between 6 and 8.

16. A method for reducing the level of poultry contamination resulting from the processing of poultry, wherein the processing of said poultry includes the steps of scalding, picking, post-pick, washer, rinsing and chilling, the method comprising the steps of:

5 recovering water used during at least one of said poultry processing steps;

treating said recovered water with a disinfectant and controlling pH of said recovered water; and

reintroducing said treated water into at least one heated processing step which uses heated water, whereby the combination of said treated water and said heated water reduces the level of  
10 microorganisms within said poultry.

17. The method for reducing the level of poultry contamination according to claim 16, wherein said at least one heated processing step is selected from the group of the scalding step, the picking step and the post-pick step.

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18. The method for reducing the level of poultry contamination according to claim 16, wherein said disinfectant is selected from the group of chlorine and ozone.

19. The method for reducing the level of poultry contamination according to claim 16,  
20 wherein said step of treating said recovered water with a disinfectant includes ozonating and chlorinating said recovered water.

20. The method for reducing the level of poultry contamination according to claim 16, wherein said disinfectant is selected from the group of chlorine, chloramine, chlorite, chlorine  
25 dioxide and ozone.

21. A system for reducing the level of poultry contamination resulting from poultry processing including the steps of scalding, picking, post-pick, washing, rinsing and chilling, the system including a water reuse and disinfection method, the water reuse method comprising the steps of:

- recovering water used during at least one of said poultry processing steps;
- treating said recovered water with a disinfectant to reduce the level of microorganisms therein; and
- reintroducing said treated water into at least one of said poultry processing steps which uses heated water;

the disinfection method comprising the steps of:

- adding a disinfectant to recovered water;
- controlling the pH level of said disinfected water; and
- using said disinfected water in said at least one of said poultry processing steps which uses heated water, whereby the combination of said heated water and said disinfected water in said poultry processing steps reduces the level of microorganisms within said poultry.

22. A method for reducing the level of poultry contamination resulting from poultry processing comprising the steps of:

- recovering water used during said poultry processing chilling step;
- removing filterable organics from said recovered water;
- reacting said filtered recovered water with a disinfectant and controlling pH of said disinfected filtered water; and
- reintroducing said disinfected filtered water into chiller tank.

23. The method according to claim 22 wherein the removal of said filterable organics reduces the chemical oxidation demand.

24. The method according to claim 23 wherein the reduced chemical oxidation demand improves the efficacy of said disinfectant.

25. The method according to claim 22 wherein the removal of said filterable organics include fats, oils, greases, proteins, blood products and lipids.

5 26. The method according to claim 16 wherein said disinfection process for use in the processing of foodstuffs is designed as an intervention step in poultry processing to allow for continuous on-line reprocessing of poultry carcasses that may have accidentally become contaminated during the evisceration process.